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GEOGRAPHICAL PUBLICATIONS

(Reviews and Titles of Books, Papers, and Maps)

For key to classification see "Explanatory Note" in Vol. II, pp. 77-81

NORTH AMERICA

UNITED STATES

South Atlantic States

CLARK, W. B. **The geography of Maryland.** Maps, diagrs., ills. *Maryland Geol. Survey [Gen. Repts.]*, Vol. 10, 1918, pp. 41-167. Johns Hopkins Press, Baltimore, 1918.

After an introduction (25 pp.) this work treats in order the geology of the state (5 pp.), the physiography (29 pp.), the climate (3 pp.), the flora and fauna (1 p.), the natural resources (35 pp.), the manufactures (3½ pp.), and the cities and towns (6 pp.). Following these topics are suggestions for physiographic and geologic excursions (10 pp.) and tables of statistics (10 pp.).

The comments of two reviewers are given below.

Dr. Clark's appreciative attitude in this report is shown by the following statement, with which his treatment of the various physiographic provinces is entirely consistent: "The physical features of a country in no inconsiderable degree determine the pursuits of its inhabitants, and these indirectly affect their social, political, and financial welfare. It becomes necessary, therefore, to know something of the physical features of a state if one would understand its past history or indicate the lines of its future prosperity."

The introduction covers about a fifth of the text and includes a wide variety of topics, some of them, such as education, revenue, and taxation, being only remotely geographic in character. Formal geology is very briefly treated and includes little more than a table of the formations which occur in Maryland. However, there is considerable geological description in the treatment of physiographic features. Much emphasis is rightly placed on the physiographic provinces, which are so well represented in Maryland. Each description of a province includes not only the physiography and its origin but also a discussion of the human relations.

To the eastward lies the Coastal Plain province, which includes the low, flat areas of the "Eastern Shore" and the rolling areas of the "Western Shore." The sinking of the coast has produced Chesapeake Bay, with its drowned estuaries which permit boats to penetrate far into the interior and promote both interstate and intrastate commerce. The shallow waters of the bay and its tributaries also furnish the oysters which make the state famous. The Piedmont Plateau to the westward is divided into the eastward and the westward portions by Parr's Ridge, a divide between the drainage of the Chesapeake and the Potomac. The productive soils were early utilized for farms, and the roads led across the uplands rather than along the valleys. The Blue Ridge, Greater Appalachian Valley, Alleghany Ridges and Valleys, and the Alleghany Plateau are briefly described. A very useful topic is the suggestions for physiographic and geologic excursions in different parts of the state.

The style is simple and readable, and the report is entirely free from the "boosting" features which are far from uncommon in many similar state reports. Excellent maps and sections are liberally used, and the illustrations really illustrate the text. The discussion of peneplanation in the Piedmont and Appalachian regions is not likely to be clear to the lay reader. Dr. Clark wrote with such fullness of knowledge that he probably overestimated his readers' ability to follow him. In the reviewer's judgment, the treatment of climate is too brief; for surely climate is one of the great geographic factors affecting mankind. The report is welcome as showing the appreciation of geography by a leading earth scientist; it should also encourage other state surveys and organizations to put sane, readable geographic information before their readers.

F. V. EMERSON

This is a posthumous work of Dr. William Bullock Clark, who for years previous to his death in July, 1917, had been professor of geology in Johns Hopkins University,

state geologist, director of the Maryland Weather Service, state forestry commissioner, state roads commissioner, etc., and had therefore had exceptional opportunities for knowing his adopted state thoroughly. Much if not most of the material in the book, including illustrations, had appeared previously in other works by the author and various associates, particularly a pamphlet on the natural resources of Maryland prepared for the Chicago World's Fair, a report on the physical features of the state which occupied a large part of the first volume of *Maryland Geological Survey General Reports* (1897) and was revised and elaborated in the sixth volume of the same series (1907), a report on the physiography of Maryland by Cleveland Abbe, Jr., in the first volume of the Maryland Weather Service reports (1899), the "Plant Life of Maryland" by Forrest Shreve and others, which constituted the third volume of the series last named (1910), and several voluminous county monographs of the Maryland Geological Survey. Typographically it is of the same high class as other official scientific publications of Maryland.

The topic of flora is very briefly treated, probably because regarded as having been sufficiently covered by the "Plant Life of Maryland"; but there seems to be no satisfactory treatment of the fauna of the state in any official publication, and it is indeed a rather difficult matter for a geographer to handle.

Regional geography is treated under physiography. The state is divided into three main divisions, coastal plain, Piedmont, and Appalachian, each with two or three subdivisions. The regional treatment of the coastal plain seems very inadequate to one familiar with the great diversity of that province. It is divided in this work, as in a few previous publications of the Maryland Geological Survey, into a few supposed Pleistocene terraces (first distinguished by G. B. Shattuck in 1901), which are hard for the uninitiated. (including the reviewer, who has been in every county in Maryland and specialized on the coastal plain) to recognize and are chiefly of academic interest anyway, for they are not shown in this work or elsewhere to bear any constant relation to soils, vegetation, population, or agriculture. In reality the features just named correlate much better with a map of the Cretaceous and Tertiary formations, which is very different from a terrace map, and it is strange that this relation has not been more clearly perceived by geologists. Even the striking differences in shore lines made by the different geological formations on the Bay side of the Eastern Shore, which are very obvious on a good geological map, receive no mention.

The several regions are not contrasted statistically, even in such simple matters as density and color of population, but this may be partly because the counties are so large that most of them cover parts of two or more regions. The book contains no maps other than small text figures occupying about a third of a page each; but a large colored geological map of the state published in 1906-07 (one edition of which shows the supposed terraces of the coastal plain) is distributed separately by the Survey and should be used in connection with this work.

In the chapter on agriculture are seven maps showing the value of farm buildings and production of certain crops per county (which means little, for the counties of course are not all the same size), by means of shading in several—usually seven—grades. The period to which these statistics pertain is not indicated, but it is presumably that of the Twelfth Census (1899-1900), for the same maps appeared in F. H. Blodgett's chapter on agriculture in the "Plant Life of Maryland" in 1910. They are very poorly visualized, for while the lowest grade is left blank in every case, the two next lowest, on every map but one, have the densest ruling.

This handsome state geography will doubtless be appreciated by Maryland teachers and, together with its predecessors, will furnish an excellent foundation for future systematic work on the geography of this very accessible and diversified state.

ROLAND M. HARPER

BOWMAN, H. H. M. **Botanical ecology of the Dry Tortugas.** Diagr., ills. *Papers from the Dept. of Marine Biology of the Carnegie Inst.*, Vol. 12, pp. 111-138. Washington, D. C., 1918.

CARY, L. R. **The Gorgonaceæ as a factor in the formation of coral reefs.** Map, ills. *Papers from the Dept. of Marine Biology of the Carnegie Inst.*, Vol. 9, pp. 343-362. Washington, D. C., 1918. [Deals with the Florida-Antillean region.]

DOLE, R. B., AND A. A. CHAMBERS. **Salinity of ocean-water at Fowey Rocks, Florida.** Diagr. *Papers from the Dept. of Marine Biology of the Carnegie Inst.*, Vol. 9, pp. 299-315. Washington, D. C., 1918.

HARPER, R. M. **A phytogeographical sketch of southern Maryland.** *Journ. Washington [D. C.] Acad. of Sci.*, Vol. 8, 1918, No. 18, pp. 581-589.

HARPER, R. M. **High living standards in "black" counties (in the southeastern United States).** 2 pp. University, [Ala.,] 1919. ["Slightly abridged from a letter published in *The Montgomery Advertiser* . . . March 28, 1919."]

HEYER, G. G., F. W. HODGE, AND G. H. PEPPER. **The Nacoochee mound in Georgia.** 103 pp.; diags., ills. *Contribs. Museum of the Amer. Indian, Heye Foundation*, Vol. 4, 1918, No. 3. New York.

HULL, J. P. D., LAURENCE LA FORGE, AND W. R. CRANE. **Report on the manganese deposits of Georgia. (Second report on manganese).** Foreward by S. W. McCallie. xiv and 295 pp.; maps, diags., ills., index. *Geol. Survey of Georgia Bull. No. 35*. Atlanta, 1919.

SCHWAB, W. G. **The forests of Dickenson County, Virginia.** 17 pp.; map, ills. *Virginia Geol. Commission Bull. No. 17*. Charlottesville, 1917.

SCHWAB, W. G. **The forests of Tazewell County, Virginia.** 14 pp.; map, ills. *Virginia Geol. Commission Bull. No. 18*. Charlottesville, 1917.

SELLARDS, E. H. **Florida State Geological Survey: Tenth and eleventh annual reports.** 130 pp.; maps, ills., index. Tallahassee, 1918.

SHEARER, H. K. **Report on the slate deposits of Georgia.** x and 192 pp.; maps, diags., ills., index. *Geol. Survey of Georgia Bull. No. 34*. Atlanta, Ga., 1918.

SWICK, C. H. **Triangulation in Georgia.** 59 pp.; maps, index. *U. S. Coast and Geodetic Survey Serial No. 65*. Washington, D. C., 1917.

VAUGHAN, T. W. **The temperature of the Florida coral-reef tract.** Maps. *Papers from the Dept. of Marine Biology of the Carnegie Inst.*, Vol. 9, pp. 321-339. Washington, D. C., 1918.

WATSON, T. L. **The Virginia earthquake of April 9, 1918.** Map. *Bull. Seismol. Soc. of Amer.*, Vol. 8, 1918, No. 4, pp. 105-116. Stanford University, Cal. [Evidence available from reports, seismograph records, and a consideration of the geological structure of the district affected indicates that this earth tremor had its origin in one or more of the faults known to exist in the parallel ridges that bound the Shenandoah Valley.]

[*Topographic map of the United States.*] Sheets, 1:62,500: (1) *Cape Henlopen*, (2) *Cedar Creek*, (3) *Rehoboth, Del.*; (4) *Harrington, Del.-Md.*; (5) *Cambon*, (6) *Jacksonville*, (7) *Mayport*, (8) *Middleburg*, (9) *Orange Park*, (10) *Palm Valley, Fla.*; (11) *Cumberland*, (12) *Everett City*, (13) *Hinesville*, (14) *Hortense*, (15) *Jesup*, (16) *Nahunta, Ga.*; (17) *Folkston*, (18) *Kingsland*, (19) *Moniac, Ga.-Fla.*; (20) *Walterboro, S. C.*; (21) *Aylett*, (22) *Carterton*, (23) *Charles City*, (24) *Doswell*, (25) *Morattico, Va.*; (26) *Richmond, W. Va.* U. S. Geol. Survey, Washington, D. C., 1918.

Western States

— **Anza, Colonel Juan Bautista de, Governor of New Mexico: Diary of his expedition to the Moquis in 1780.** With an introduction and notes by Ralph E. Twitchell. 47 pp.; ills. *Hist. Soc. of New Mexico [Publ.] No. 21*. Santa Fe(?) [Paper read at the annual meeting, 1918.]

ATWOOD, W. W. **Relation of landslides and glacial deposits to reservoir sites in the San Juan Mountains, Colorado.** 38 pp.; maps, diags., ills. *U. S. Geol. Survey Bull. 685*. Washington, D. C., 1918.

DANA, S. T. **What the National Forests mean to the water user.** 52 pp.; map, ills. U. S. Dept. of Agriculture, Forest Service, Washington, D. C., 1919. [A popular discussion of the value of national forests.]

GRAVES, H. S. **Thunder Mountain.** Ills. *Amer. Forestry*, No. 303, Vol. 25, 1919, March, pp. 907-911. Washington, D. C. [This important watershed in central Idaho, from which many streams flow into the upper tributaries of the Columbia River, has not yet been included within the National Forests by which it is surrounded. The Chief Forester urges the necessity of its being so included, both as a safeguard against the spread of fire into the adjoining timber and as a protection to the water supply of the Columbia.]

HALLENBECK, CLEVE. **Night-temperature studies in the Roswell fruit district.** Map, diags. *Monthly Weather Rev.*, Vol. 46, 1918, No. 8, pp. 364-373. Washington, D. C. [This district, covering an area of 1,200 square miles, mostly west of the Pecos

River, New Mexico, includes practically all of the fruit-growing and farming lands of the valley.]

KNOFF, ADOLPH. A geologic reconnaissance of the Inyo Range and the eastern slope of the southern Sierra Nevada, California. With a section on the stratigraphy of the Inyo Range, by Edwin Kirk. 130 pp.; maps, diagrs., ills., bibliogr., index. *U. S. Geol. Survey Professional Paper 110*. Washington, D. C., 1918. [This paper describes the region containing the recently developed wolfram deposits of the Tungsten Hills.]

VARNEY, B. M. Thirty-year synopsis: Meteorological observations made at Berkeley from July 1, 1887, to June 30, 1917. Diagrs. *Univ. of California Publs. in Geogr.*, Vol. 2, 1919, No. 1, pp. 1-18. Berkeley.

MEXICO AND CENTRAL AMERICA

PANI, A. J. Hygiene in Mexico [City]: A study of sanitary and educational problems. Transl. by E. L. de Gogorza. xii and 206 pp.; diagrs. G. P. Putnam's Sons, New York and London, 1917. \$1.50. 7½ x 5.

Mexico City is the most unhealthful large city in the world, in spite of the fact that its situation at an elevation of 7,000 feet gives it advantages over other tropical cities situated near sea level. The author of this work points out some of the causes of the high death rate. Modern man is not entirely responsible. A large share of the guilt rests upon Cortés, who, contrary to explicit instructions from the Spanish crown as to the sanitary conditions necessary for the site of New Spain's capital, determined to build upon the ruins of Tenochtitlan. In the opinion of Señor Pani a worse location could scarcely have been found. Situation, topography, the character of the soil, temperature, humidity of the atmosphere, rains, and winds, all contribute toward its unhealthfulness. The depression occupied by Lake Texcoco, around which the city is built, was the lowest part of the enclosed upland basin and hence received and retained the entire drainage of the city and the surrounding region. This condition was partly remedied by the completion in 1900 of the famous *desague*, or drainage canal, one of the greatest engineering enterprises ever undertaken. As the city grew out over the swampy borders of the lake, a water-soaked subsoil kept the surface far too damp for healthful conditions. Moreover, great daily range of temperature, marked difference between the shade and the sun, and sudden abrupt changes combine with high atmospheric humidity during the summer months to make distempers of the digestive system very common. Added to this, the prevailing northerly winds come from valleys destitute of vegetation and bring clouds of dust. Diseases of the respiratory organs cause an average of 4,329 deaths a year in this city of 471,000 people.

According to the author the case is grievously aggravated by the entire lack of sanitary precautions among all classes of the people, who have not yet taken to heart the new doctrine that "filth is a sin." The dwellings lack sanitary provisions. Halls, vestibules, etc., which would serve to avoid sudden changes of temperature in passing from room to room are uncommon in the Mexican style of building about an open *patio*. Window space, too, is sadly lacking. The streets, laid out in north-south and east-west directions, afford poor distribution of sunlight, while they are almost invariably so narrow as greatly to limit the hours of exposure to the sun's rays.

Though many of these natural disadvantages cannot be remedied, the author urges the organization of a far more effective sanitary service. He believes, too, that general education of the people and better economic conditions for the poorer classes will make possible a greater degree of hygiene that will offset some of the defects in location and construction of the city.

BUSTAMANTE, MIGUEL. El petróleo en la República Mexicana: Estudio geológico económico sobre los yacimientos petrolíferos Mexicanos. Part I. iv and 216 pp.; maps, diagrs., ills. *Inst. Geol. de Mexico Bol. No. 35*. Mexico, 1918.

LÓPEZ, ELPIDIO. Régimen pluviométrico de la República Mexicana. *Bol. Soc. Mexicana de Geogr. y Estadística*, Vol. 7, 1918, No. 8, pp. 425-429. Mexico.

LÓPEZ-PORTILLO Y ROJAS, JOSÉ. Los Chimalhuacanos. Ills. *Bol. Soc. Mexicana de Geogr. y Estadística*, Vol. 8, 1918, No. 1, pp. 42-67. Mexico.

POWERS, SIDNEY. Notes on the geology of eastern Guatemala and northwestern Spanish Honduras. Maps. *Journ. of Geol.*, Vol. 26, 1918, No. 6, pp. 507-523.

ROUAIX, PASTOR. Descripción de una parte de la Sierra Madre en el Estado de Durango desde los límites de Chihuahua hasta el paralelo 24. *Bol. Soc. Mexicana de Geogr. y Estadística*, Vol. 7, 1918, No. 9, pp. 551-565. Mexico.

SALINAS, MIGUEL. *El río de Yautepec*. *Bol. Soc. Mexicana de Geogr. y Estadística*, Vol. 7, 1918, No. 8, pp. 385-389. Mexico.

TALBOT, E. H. *Present conditions and the outlook in Mexico*. *Journ. of Race Devel.*, Vol. 9, 1919, No. 4, pp. 344-361. Worcester, Mass.

UGALDE, JOSÉ. *Las inundaciones en el Estado de Tabasco*. *Bol. Soc. Mexicana de Geogr. y Estadística*, Vol. 7, 1918, No. 8, pp. 391-396. Mexico.

SOUTH AMERICA

PARAGUAY, URUGUAY, ARGENTINA, CHILE

OJEDA, L. T. *Formación de la raza chilena*. *Rev. Chilena de Hist. y Geogr.*, Vol. 26, 1918, No. 2, pp. 76-89. Santiago de Chile.

OJEDA, T. T. *Cuestiones de geografía austral de Chile: I, El istmo de Ofqui; II, Límites de Llanquihue, Chiloé, y territorio de Magallanes*. *Rev. Chilena de Hist. y Geogr.*, Vol. 25, 1918, No. 1, pp. 161-217. Santiago de Chile. [An account of explorations in the south of Chile and the interprovincial boundaries in that region.]

ORMEZANO, VINCENZO. *Le comunicazioni fra l'Italia e il Cile*. *La Geografia*, Vol. 5, 1917, No. 2, pp. 63-68. Novara.

OUTES, F. F. *Nuevos rastros de la cultura Guaraní en la cuenca del Paraná inferior*. Ills. *Anal. Soc. Científica Argentina*, Vol. 85, 1918, No. 3-4, pp. 153-182. Buenos Aires.

— *Paraguay: General descriptive data*. 31 pp.; ill. Pan American Union, Washington, D. C., 1916.

PARDO, DENIS. *Territoire National de los Andes, Puna de Atacama*. *Atti X Congr. Internaz. di Geogr., Roma, 1913*, pp. 1245-1298. Reale Società Geografica, Rome, 1915. [A useful study of a region on which geographical literature is scanty. From the economic standpoint the region is, or rather will become, important on account of its mineral wealth—borate, sulphur, silver, and copper.]

RASSMUSS, JUAN. *Investigación de la estructura tectónica de la cuenca imbrífera del Río de la Rioja con motivo de la disminución del caudal de dicho río*. 20 pp.; diagrs., ill. *Direcc. Gen. de Minas, Geol. e Hidrol. Bol. No. 17, Ser. B (Geol.)*. Minist. de Agric., Buenos Aires, 1918.

ROMERO, A. A. *El homo pampaeus: Contribución al estudio del origen y antigüedad de la raza humana en Sud América según recientes descubrimientos*. Ills. *Anal. Soc. Científica Argentina*, Vol. 86, 1918, No. 1-2, pp. 5-48. Buenos Aires.

— *Santiago, Observaciones meteorológicas en 1911-1915, (resúmenes)*. Introduction by Carlos Henríquez. 50 pp.; diagrs. *Inst. Meteorol. y Geofísico de Chile Sección Meteorol. [Publ.] No. 21*. Santiago de Chile, 1917.

SOBRAL, J. M. *Estudio petrográfico de algunas rocas argentinas*. 54 pp.; ill. *Anal. Minist. de Agric.: Sección Geol., Mineral. y Minería*, Vol. 13, No. 2. Direcc. Gen. de Minas, Geol. e Hidrol., Buenos Aires, 1918.

UHLE, MAX. *Fundamentos étnicos de la región de Arica y Tacna*. Ills. *Bol. Soc. Ecuatoriana de Estudios Hist. Amer.*, Vol. 2, 1919, No. 4, pp. 1-37. Quito.

UHLE, MAX. *Los aborígenes de Arica y el hombre americano*. *Rev. Chilena de Hist. y Geogr.*, Vol. 27, 1918, No. 3, pp. 33-54. Santiago de Chile.

— *Uruguay: General descriptive data*. 31 pp.; ill. Pan American Union, Washington, D. C., 1916.

WAGEMANN, ERNST. *Die Wirtschaftsverfassung der Republik Chile*. viii and 253 pp.; bibliogr. Duncker & Humblot, Munich and Leipzig, 1913. M. 6. 10 x 7.

WICHMANN, RICARDO. *Geología e hidrogeología de Bahía Blanca y sus alrededores (Provincia de Buenos Aires)*. 67 pp.; map, ill. *Anal. Minist. de Agric.: Sección Geol., Mineral. y Minería*, Vol. 13, No. 1. Direcc. Gen. de Minas, Geol. e Hidrol., Buenos Aires, 1918.

WINDHAUSEN, A. *The problem of the Cretaceous-Tertiary boundary in South America and the stratigraphic position of the San Jorge-formation in Patagonia*. Maps, diagr. *Amer. Journ. of Sci.*, No. 265, Vol. 45, 1918, pp. 1-53.

— *Argentina, Mapa geológico-económico de la República. Hoja 35 m (Bahía Blanca)*. 1:200,000. [In three sheets:] (1) *Geología*; (2) *Topografía* [relief in contours; intervals seemingly 6¼ meters]; (3) *Datos complementarios* [containing data on water

supply and soils]. Minist. de Agric., Direcc. Gen. de Minas, Geol. e Hidrol., Buenos Aires, 1916.

LUDWIG, PABLO. *Nuevo Mapa de la República Argentina y sus países limítrofes Chile, Uruguay, y Paraguay.* 1:4,000,000. Pablo Ludwig, Buenos Aires, 1916. [Good reference map. Relief in brown shading. Provinces, etc., prominently colored.]

EUROPE

GENERAL

— **Baltic Provinces and Lithuania, The peoples of the.** Map. *The Round Table*, No. 30, March, 1918, pp. 293-307. London.

BERET, GEORGES. **Autour d'une mer: La question de l'Adriatique.** *Colonies et Marine*, Vol. 3, 1919, No. 1, pp. 19-32. Paris.

COLE, G. A. J. **The narrow seas and the Arctic route to Muscovy.** *Geogr. Teacher*, No. 53, Vol. 10, Part I, 1919, pp. 4-8. London.

DEMORLAINE, J. **Strategic importance of forests in the war.** Translated by S. T. Dana from *Rev. des Eaux et Forêts*, February, 1919, and revised to date by P. S. Ridsdale. Ills. *Amer. Forestry*, No. 305, Vol. 25, 1919, May, pp. 1040-1043. Washington, D. C.

HANNAY, H. B. **European and other race origins.** xxxv and 491 pp.; maps, bibliogr., index. Sampson Low, Marston & Co., Ltd., London, 1915(?) 9 x 6.

LINGELBACH, W. E. **Geographic factors in the world war.** *Bull. Geogr. Soc. of Philadelphia*, Vol. 16, 1918, No. 4, pp. 126-139.

LOUIS, H. **Mineral production in relation to the peace treaty.** *Nature*, No. 2585, Vol. 103, 1919, May 15, pp. 205-206. London.

MEILLET, A. **Les langues dans le bassin de la mer Baltique.** *Scientia*, Vol. 24, 1918, pp. 383-392. Bologna.

NITSCH, CASIMIR. **Frontières linguistiques polono-tchèque et polono-slovaque.** *Le Moniteur Polonais*, No. 18, 1919, February 15, pp. 374-379. Bern.

RONCAGLI, GIOVANNI. **Physical and strategic geography of the Adriatic.** Maps, ill. *Geogr. Journ.*, Vol. 53, 1919, No. 4, pp. 209-228 (discussion, pp. 223-228).

RUBICON [pseud.]. **Czecho-Slovak claims.** Maps. *The New Europe*, No. 128, Vol. 10, 1919, March 27, pp. 247-251; No. 129, April 3, pp. 275-280; No. 130, April 10, pp. 304-309. London.

— **Ruthénie-Blanche, Les problèmes politiques en.** Map. *Le Moniteur Polonais*, No. 16, 1919, January 15, pp. 340-346. Bern.

SAVIČ, V. R. **South-Eastern Europe: The main problem of the present world struggle.** Introduction by Nicholas Murray Butler. 276 pp.; map, ill., index. Fleming H. Revell Co., New York, 1918. \$1.50. 8½ x 5½.

WINTERBOTHAM, H. S. L. **British survey on the western front.** Maps, ill. *Geogr. Journ.*, Vol. 53, 1919, No. 4, pp. 253-276 (discussion, pp. 271-276). [Tells in some detail of the work accomplished by the Allied surveyors in the preparation of large-scale maps made necessary by "a war of positions."]

— **Europe, 1:1,000,000.** Sheets. North: (1) L 30, Bordeaux; (2) L 37, Rostov; (3) M 29, Cork; (4) M 37, Kharkov; (5) N 37, Moskva (Moscow); (6) O 29, Stornoway; (7) O 30, Aberdeen; (8) O 31, Stavanger; (9) O 32 and part of O 31, Kristiania and part of Stavanger; (10) O 37, Yaroslavl; (11) O 38, Nijni Novgorod; (12) P 29 and 30, Thors-haun and Lerwick; (13) P 31 and 32, Bergen and Trondhjem; (14) P 37 and 38, Kargopol and Ustyug; (15) Q 33 and 34 and part of 32, Bodö and Luleå and part of Namsos; (16) Q 37 and 38, Arkhangelsk and Mezen; (17) R 37 and 38, Rinda and Kanin. (All except L 30, L 37, M 37, N 37, are provisional editions.) *Geogr. Sect., Genl. Staff [Map] No. 2758.* Ordnance Survey Office, Southampton, 1917-1918. [Drainage in blue, relief in brown contours, railroads and names in black, roads in red.]

GROSS, ALEXANDER. **The Daily Telegraph map No. 25: Races of Eastern Europe.** [1:2,000,000.] "Geographia" Ltd., London, 1917(?) [Good general map. Could be used effectively as a wall map because of its large scale and contrasting colors. In the Balkans, the Serbo-Bulgarian ethnic frontier is shown to lie east of the political frontier, and the Macedonian Slavs are, with Cvijić, treated as a separate unit. The separation

of Ruthenians and Little Russians, especially by so contrasting colors as those used, is unfortunate. The distinction of the Maltese as a separate ethnic unit seems like overdoing the point.]

GROSS, ALEXANDER. *The Daily Telegraph war map No. 29: "The German Peace."* [1:2,000,000.] "Geographia" Ltd., London, [1918.] [Shows new boundaries as defined by the Treaty of Brest Litovsk, March 3, 1918, and the Treaty of Bucharest, June 12, 1918.]

GROSS, ALEXANDER. *The Daily Telegraph gazetteer war map No. 4.* Compiled from official sources. [1:633,600.] "Geographia" Ltd., London, [1918.] [Shows battle line on June 30, 1916, March 21, June 30, and Nov. 11, 1918; also armistice frontier and neutral zone.]

— *Western Front, The Allies' map of the: A detailed reference map, Paris to the Rhine.* 1:475,000 (7½ miles to 1 inch). George Philip & Son, Ltd., [1918.] [Good map, general and yet sufficiently detailed, to follow the military campaigns on the western front. The following battle lines are shown in red: (1) extreme limit of German advance, Sept. 5, 1914; (2) battle front of July 1, 1916; (3) battle front of March 20, 1918; (4) limit of German advance to July 18, 1918; (5) limit of Allies' advance to Oct. 23, 1918.]

RUSSIA

FUNCK-MISOUTCH, M. R. *Le ricchezze minerali della Russia.* *La Geografia*, Vol. 6, 1918, No. 2, pp. 82-88. Novara.

LEVASSEUR, N. *Choses de Russie.* *Bull. Soc. de Géogr. de Québec*, Vol. 12, 1918, No. 4, pp. 217-221.

MARCHANT, F. P. *The Cecho-Slovaks in Russia and the British Declaration.* *Asiatic Rev.*, No. 40, Vol. 14, N. S., 1918, Oct., pp. 437-448. London.

WINTER, N. O. *The Ukraine, past and present.* Ills. *Natl. Geogr. Mag.*, Vol. 34, 1918, No. 2, pp. 114-128.

— *European Russia, Railway map of.* In 2 sheets. [1:2,500,000.] R. Martens & Co., New York. 1919. [Valuable map based on the official Russian railroad map showing the names of practically all stations. The system of transliteration is not adjusted to English usage throughout; for instance the full "u" sound is rendered by the French equivalent "ou."]

— *Ukraine and the contiguous countries, General physical chart of the.* [1:5,000,000.] Svoboda, Jersey City, [1918]. [Relief in very fair hachuring in brown and seven altitude tints. Exceptionally good for a wax-engraved map.]

AUSTRIA-HUNGARY*

DAINELLI, GIOTTO. *La popolazione di Fiume.* *Riv. Geogr. Italiana*, Vol. 26, 1919, No. 1-4, pp. 28-46. Florence.

EREDIA, FILIPPO. *Il clima di Gorizia nel quarantacinquennio 1870-1914.* 11 pp. Reprint from *Boll. Bimensuale Soc. Meteorol. Italiana*, 1917, No. 6-9. Turin.

LAENG, GUALTIERO. *Il Carso: Geografia, geologia, paesaggio e vegetazione, doline, grotte e abissi, idrologia sotterranea.* Maps, diagrs., ills. *Riv. Mensile Club Alpino Italiano*, Vol. 36, 1917, No. 8-9-10, pp. 190-197; No. 11-12, pp. 233-246. Turin.

BARATTA, MARIO. *Carta del grande altopiano della Carsia Giulia (Carso triestino-goriziano).* 1:100,000. [With 24 pp. of text.] Inset: Gli altipiani della Carsia, 1:500,000. Istituto Geografico De Agostini, Novara, 1918. L. 2.50. [Admirable map, showing relief in shading and contours, with the lowlands tinted green. An inset, 1:500,000, shows the plateaus of the Karst, distinguishing between the limestone uplands and the alluvial lowlands.]

ASIA

TURKEY IN ASIA, ARABIA, CAUCASIA, IRAN

BERNARD, AUGUSTIN. *La Syrie et les Syriens.* *Ann. de Géogr.*, No. 151, Vol. 28, 1919, pp. 33-51.

BERTACCHI, COSIMO. *L'Armenia.* 24 pp.; map, ills., bibliogr. *Quaderni Geografici*, Vol. 1, 1918, No. 2. Istituto Geografico de Agostini, Novara, 1918.

* Pending the final settlements, the political divisions of 1914 will be retained.—EDIT. NOTE.

CARRUTHERS, DOUGLAS. **The great desert caravan route, Aleppo to Basra.** Map. *Geogr. Journ.*, Vol. 52, 1918, No. 3, pp. 157-184.

HOLDICH, THOMAS. **Bagdad.** *Journ. Central Asian Soc.*, Vol. 4, 1917, Part II, pp. 40-55 (discussion, pp. 49-55). [London.]

— **Palestine and Jewish nationalism.** *The Round Table*, No. 30, March, 1918, pp. 308-336. London.

PEARS, EDWIN. **Turkey, the war, and climatic influences in Asia Minor.** *Journ. Central Asian Soc.*, Vol. 2, 1915, Part III, pp. 97-112 (discussion, pp. 108-112). [London.]

PICHERY, P. **La question d'Asie-Mineure.** Map. *Colonies et Marine*, Vol. 3, 1919, No. 4, pp. 241-247. Paris.

TAYLOR, A. B. **The River Tigris from the sea to Baghdad.** *Journ. Central Asian Soc.*, Vol. 4, 1917, Part III, pp. 72-89 (discussion, pp. 87-89). [London.]

— **Turkey: A past and a future.** Reprinted (with additions) from *The Round Table*, for June, 1917. 79 pp.; maps. Hodder & Stoughton, London, 1917. 9½ x 6.

— **Armenia, The seat of war in.** (Stanford's War Maps, No. 10.) 1:1,000,000, or 1 inch to 15.78 miles. Edward Stanford, Ltd., London, 1915. [Map on relatively large scale; relief in brown shading.]

CHINA

CARACI, GIUSEPPE. **Il padre Matteo Ricci e le carte speciali della Cina nelle collezioni di Orlorio e di Mercatore.** *Boll. Reale Soc. Geogr. Italiana*, Vol. 7, 1918, No. 11-12, pp. 845-851. Rome.

CHAPMAN, H. H. **Forests and floods in China.** Ills. *Amer. Forestry*, No. 302, Vol. 25, 1919, February, pp. 835-843. Washington, D. C.

CHENG, SHI-GUNG. **China's geography: Historical and social.** Map, ills. *Scottish Geogr. Mag.*, Vol. 34, 1918, No. 8, pp. 281-294.

— **China, Postal map of.** (Enclosure to "Report on the Working of the Chinese Post Office" for the Sixth Year of Chung-Hua Min-Kuo (1917) and 7th issue of *The Postal Guide*.) 1:2,400,000. Directorate General of Posts, Shanghai, 1917. 50 cents. [Shows postal routes in detail, those established in 1917 being differentiated in red.]

— **Kiangsu District, Postal route map of.** [1:1,400,000.] Corrected to December 21, 1917. [In English and Chinese.] [Postal Commissioner's Office, Nanking, 1918.]

TEICHMAN, ERIC. **China: Map showing routes in the province of Shensi.** 1:2,000,000. Accompanying the author's article "Notes on a Journey Through Shensi," *Geogr. Journ.*, Vol. 52, 1918, No. 6.

WORLD AS A WHOLE AND LARGER PARTS

WATSON, MALCOLM. **Rural sanitation in the tropics: Being notes and observations in the Malay Archipelago, Panama, and other lands.** xvi and 320 pp.; maps, diagrs., ills. John Murray, London, 1915. 12s. 9 x 6.

Long experience in the Malay Peninsula, both in government work and in the sanitation of private estates, has given Dr. Watson a thorough knowledge not only of malaria, but of how to prevent it. Wide travel has broadened his perspective so that he views his problem as part of the greater problem of the uplifting of the tropics. Although nearly two-thirds of his book is devoted to details of the familiar story of the preventive measures employed at Panama, the most valuable parts deal with neighboring regions and with Malaya. A short section on British Guiana states that in many districts "the infantile mortality is so high that the negro population is actually decreasing. The high infantile death rate is indeed the negro's chief asset. It keeps wages so high that if he works for a day he can retire to his hut for a week." Barbados receives attention as an example of a tropical region without malaria. Dr. Watson, on apparently good grounds, rejects the usual view that mosquitoes are absent because the larvae are eaten by a small minnow called the "millions." He attributes the island's immunity to its geological structure as a coral reef. He might have strengthened his argument by stating that the Bahamas, which are likewise composed of recently uplifted coral limestone, are almost free from malaria. In both cases the limestone is so porous that there is practically no standing water. Hence no breeding places for mosquitoes.

The most interesting part of Dr. Watson's book is the first one hundred pages where he describes his own experience in British Malaya. Few people realize the wonderful progress that has been made in the prevention of malaria on tropical plantations. Everyone is familiar with what has been achieved in Panama, but that is a highly specialized case where large numbers of people are gathered in a small area, where the government has complete and easy control, and where large amounts of money have been freely spent. On isolated plantations, however, where native labor is being employed to raise rubber, cacao, bananas, and other tropical products, the prospects have appeared by no means so bright. Nevertheless Dr. Watson shows that in Malaya it has been possible almost entirely to eradicate malaria in the level lowlands by the simple expedient of careful ditching and drainage. At first quinine was administered as a preventive, houses were screened, and other methods such as oiling the pools were tried, but it was soon found that drainage alone is sufficient. The only requisites are that the drains extend to a distance of 2,000 feet or so from the dwellings, that they be dug so that the water keeps slowly in motion, and that weeds and materials on which the mosquitoes can breed be carefully cleaned out. Under such conditions even the careless natives enjoy almost complete immunity except when they go out into surrounding districts where malaria still prevails.

Contrary to the general belief the elimination of malaria in many tropical regions is much harder among the hills than in the swamps. The ordinary view of the matter is based on conditions in regions like Italy where the malarial mosquitoes are confined to the lowlands. In southeastern Asia, however, including India, the Malay Peninsula, and some of the neighboring islands several kinds of malarial mosquitoes live in the clear running streams of the mountains. Attempts to get rid of them by cleaning out the streams so that there are no grasses, sticks, or protected places on which the larvae may lodge have proved sadly ineffective. Dr. Watson discovered that this is because even in swiftly running water the larvae of these species can cling to rocks or other hard substances and thus breed in streams of crystal clearness and purity. Among the hills, therefore, he promptly put all the water underground in closed drains. Thus highland plantations have been rendered as safe as those of the lowlands, and death rates reduced to one-tenth of what they were.

Dr. Watson's investigations seem also to indicate that slight changes in the chemical composition of the water are enough to drive away one species of mosquitoes or another. Thus it may be possible to employ still another method in improving the health of the tropics. Furthermore, the author describes many instances where the thorough cultivation of the land has largely eliminated malaria. Where all the land is well tilled there is little room for stagnant water. Thus in one way or another there is hope not only for the towns of tropical regions, but for the plantations, whose cultivation must form the basis of any real progress. By a combination of sound engineering work with brilliant scientific speculation Dr. Watson has put himself among the leaders in the regeneration of the vast regions cursed by malaria. Large parts of his book record his observations with an almost unnecessary degree of minuteness. Nevertheless its many pages of admirable exposition, its descriptions, such as that of fortunate non-malarial Sumatra, and its earnest, open-minded spirit commend it to all who are interested in the lands within thirty degrees of the equator.

ELLSWORTH HUNTINGTON

MATHEMATICAL GEOGRAPHY

CARTOGRAPHY

BREMNER, ALEXANDER. **A new medium for the construction of geographical models.** *Diagrs. Scottish Geogr. Mag.*, Vol. 34, 1918, No. 9, pp. 342-350. [Molders' sand.]

BROWN, ROBERT M. **Making wall maps of limited areas.** *Maps. School Sci. and Math.*, Vol. 18, 1918, No. 5, pp. 397-400. Chicago.

DE MARCHI, LUIGI. **La rappresentazione della superficie terrestre.** *Scientia*, Vol. 25, 1919, pp. 186-195. Bologna. [A discussion of the best projection methods for the various kinds of mapping.]

PHYSICAL GEOGRAPHY

METEOROLOGY AND CLIMATOLOGY

- (1) — **Barometer manual for the use of seamen, A: A text-book of marine meteorology.** 8th edit. 106 pp.; maps, diagrs., ill., index. *M[eteorol. O[ffice Publ. No.] 61.* Meteorological Office, London, 1916. 1s.

- (2) — **Seaman's handbook of meteorology, The: A companion to the barometer manual for the use of seamen.** 3rd edit. xxxviii and 202 pp.; maps, diagrs., ills., index. *M[eteorol.]. O[ffice Publ. No.] 215.* Meteorological Office, London, 1918. 3s. 6d.
- (3) — **Marine observer's handbook, The.** 2nd edit. iv and 142 pp.; diagrs., ills., index. *M[eteorol.]. O[ffice Publ. No.] 218.* Meteorological Office, London, 1918. 3s. 6d.

The British Meteorological Office issues a large series of important publications which are by no means so well known, or so widely used, in this country as they deserve to be. This regrettable situation is doubtless due in part to the fact that these volumes are not generally advertised and in part to the fact that many teachers and students who would naturally buy them are under the mistaken impression that all these publications are either highly technical or else are of interest to British readers, and especially to British seamen, only. This is far from being the case. Several of them are of value to every teacher and student of meteorology in the United States. Furthermore, the low price at which these volumes are sold is another reason why they should be widely known in our own country.

(1) The "Barometer Manual for the Use of Seamen" is historically an interesting volume, for it is the lineal successor of the barometer manual originally prepared by Admiral Fitzroy. It was first published in 1884 as a revised edition of Fitzroy's book and has been through seven editions, the present issue being the eighth. In all, about 35,000 copies of the work have been distributed. As its title implies, it deals chiefly with the barometer and the method of using it; with pressure and its variations; with the causes and distribution of winds; and with storms and gales in both tropical and extratropical latitudes. The descriptions and explanations are simple, clear, and direct. Excellent charts and numerous figures illustrate the most important topics. One of its most valuable portions is a new introduction, setting forth the most modern views of the structure of the atmosphere and the relation existing between pressure distribution, upper currents, and surface winds. These subjects are not naturally easy for the ordinary reader to understand, but the discussion is admirably clear, and the 25 pages of this introduction might well be included in any modern textbook of meteorology. The rapid progress of the new meteorology may be seen in the free use of such terms as "cyclotrophic" and "geostrophic" motion and "katabatic" and "anabatic" winds. The introduction of the new C. G. S. units of pressure and of absolute temperatures is another sign of recent advance, but the older units (inches, hundredths, Fahrenheit degrees) are also included. Furthermore, the general introduction of wireless telegraphy and the possibility of constructing daily weather maps on board vessels at sea, have led to the addition of an appendix containing instructions regarding the transmission of daily meteorological information by wireless from the Eiffel Tower. The two weather charts (Pl. 34), prepared from messages issued by radiotelegraphy from the Eiffel Tower, are in themselves well worth the extremely low price of the manual. The volume is really a historical one, giving the facts of the general atmospheric circulation as far as these are known from observations at sea. But, to quote (p. 25), "the time has now arrived when seamen *who are interested in meteorology, as well as the weather* [the italics are ours] may be interested to see the direction in which scientific investigation is leading." The book itself may be considered as introductory to the Introduction, "but the facts are still the most important feature, and their representation is still the main purpose of the book."

(2) "The Seaman's Handbook of Meteorology" is more general in character. It is intended for the ocean-going sailor who needs to know the rudiments of meteorology in order to make the most intelligent use of the "Barometer Manual." Emphasis is laid first upon the individual weather elements and then upon weather and upon forecasting, both by weather maps and by observations at a single station, as on board ship. In the discussion of forecasting, of weather types, and of the conditions which bring gales and fog the British Isles and their adjacent water areas are chiefly considered; but much of the very useful and practical information contained in these chapters applies, with slight modifications, to the North Atlantic steamer routes. A chapter on icebergs and other forms of drifting ice is included because of the obvious importance of this subject in navigation and because of the connection which exists between meteorological conditions and the amount and drift of ice at sea. There are also a chapter on instruments and their use, an appendix on the mirage and its effects in causing displacements of the apparent sea horizon, and a general preface by Sir Napier Shaw. The text is by Commander M. W. Campbell Hepworth, Marine Superintendent of the Meteorological Office. Type weather maps, ice charts, cloud views, and other illustrations are included.

The passing of the sailing vessel with the increasing use of steam does not mean that meteorological conditions no longer need consideration in ocean navigation. Far from it. Wind, fog, floating ice, and snow still are, and will always remain, of critical importance to seamen. The ocean liner which steams ahead through a fog is in greater danger of collision with another vessel or with an iceberg than is the sailing ship, which under such conditions is either becalmed or is moving but slowly. And, whatever else may be said, it remains true that "whatever be the size or power of an ocean-going vessel, her success as a dividend-earner depends upon taking advantage of all circumstances, including the weather."

(3) As its title indicates, "The Marine Observer's Handbook" is a complete set of instructions for the use of captains and officers of vessels conducting observations for the British Meteorological Office. It therefore has special reference to the form of meteorological log which is supplied to British ships. There are, nevertheless, several matters in it which have a general interest, such, e. g., as the difficult problem of the proper exposure of a rain gage at sea and the discussion of waves and swell and optical phenomena.

These three publications, while not designed for use on land or in general meteorological instruction, all contain much of interest and value to any student of meteorology.

R. DEC. WARD

PAINE, G. P. **Report on modes of air motion and the equations of the general circulation of the earth's atmosphere.** Diags., bibliogr. *Monthly Weather Rev.*, Vol. 46, 1918, No. 7, pp. 311-323. Washington, D. C.

It takes a mathematical physicist to appreciate fully the value of this paper, the object of which "is to classify and to analyze fundamental modes of air motion and to ascertain some of the mathematical laws governing general circulation, a particular mode of motion in the earth's atmosphere."

"The reason for the apparent failure of the kinetic theory of gases to account for observed air motions is to be found in the fact that the classical equations apply to the instantaneous air drift out of one fixed, microscopic volume element into another, while the motions that actually come under observation are in general of another and fundamentally different mode.

"With a view to removing this difficulty, air motions are classified [and discussed mathematically in detail] in terms of mass motion, molecular motion, winds, and turbulence. Winds are classified with reference to their order [i. e. unit of time used]; and turbulent motions, with reference to their order and to their kind. * * *

"Varied and in some respects conflicting as the data seem to be, the following generalizations seem to have been empirically established. (a) Turbulence of the kind under consideration appears in the neighborhood of obstacles, material boundaries and surfaces of discontinuity, and in general where high differential velocities exist between adjacent fluid strata. (b) It may appear where the material boundaries and the adjacent fluid strata are at the same temperature. (c) A wind of order T [time unit] is in general modified profoundly by the occurrence of superimposed gusts, cross-currents, and eddies—turbulent motions relative to T . In particular, a turbulent wind does not obey the laws * * * governing the mass motion of the gas. On account of the first two of the foregoing generalizations, the kind of turbulence under consideration will be referred to as *kinetic turbulence*. * * *

"*Convective turbulence*. A stream of water at 20° C. and flowing rapidly down an inclined iron trough at the same temperature will exhibit turbulence relative to a general drift corresponding, say, to hourly means. If the temperature of the trough be sufficiently increased, the water will boil as it descends, and the turbulence will thus be enormously complicated by the appearance of a new type of stream-line irregularities. Such irregularities, which are due to temperature differences between material boundaries and their adjacent fluid strata, occur in the lower layers of the atmosphere and operate powerfully to modify atmospheric stream lines. On a fair summer day the process is generally visible. During the morning, the earth becomes hotter than the adjacent air, and heat is conducted from the ground to the lowest air stratum. The resulting vertical instability manifests itself in multitudinous flickering jets rising from the ground. Although these jets are visible only to the height of a few feet, the appearance of cumulus clouds bears witness to the fact that the jets are uniting into massive convection columns which are driven upward to an altitude of perhaps a mile. The structure of higher-order surface winds is profoundly complicated by these enormous air columns cutting across their lines of flow. Relatively lacking in momentum, the ascending masses mix with the currents of the upper air, while irregular downward draughts, replacing the thermally driven masses and transmitting horizontal momentum from the upper air currents to the surface layers, unite into a wind of

higher order near the ground, which, making itself first felt in the morning, attains a maximum velocity during the day and disappears during the late hours of the afternoon.

"This mode of motion, *convective turbulence*, is characteristic of regions where the material boundaries and the adjacent air strata are at different temperatures. It accordingly differs essentially from kinetic turbulence with regard to its origin; possibly also with regard to characteristic stream-line configurations. * * *

"But in the results of observation there is generally little or nothing to enable one to distinguish between kinetic and convective turbulence. Near the earth the two phenomena combine to the extent that the atmosphere has well been called a 'treacherous sea,' where irregular cross currents and eddies, violent swirls, and sudden side gusts prevail."

At the end of the paper there is a bibliography of 104 references to contributions by 80 different authors.

CHARLES F. BROOKS

SHAW, NAPIER. **The weather map: An introduction to modern meteorology.** 4th issue. *109 pp.; maps, diagrs., index. *M[eteorol.]. O[ffice Publ. No.]*. 225 i. London, 1918. 4d.

— **Meteorological glossary, in continuation of "The Weather Map" (M. O. 225 i).** 4th issue. 358 pp.; maps, diagrs., ill. *M[eteorol.]. O[ffice Publ. No.]*. 225 ii. London, 1918. 1s.

To write "an introduction to modern meteorology" within less than 50 pages of a small-sized book costing but fourpence would seem an impossible task. But Sir Napier Shaw has done it and done it well. "The Weather Map" has a distinct war bearing, as is seen in the opening paragraphs on meteorology and military operations; in the section on the meteorologist at the headquarters of a modern army; and in the climatic summaries for London, Paris, Philippopoli (Balkans), Babylon (Mesopotamia), Helwan Observatory (Egypt), and Dar es Salam (East Africa). But the little volume has a more permanent interest than that associated with the war. It presents some of the fundamental facts of modern meteorology in so clear, so concise, and so simple a way that it is not only interesting reading but is highly instructive as well.

About half of the volume is devoted to the climatic summaries for one station in each of the principal British war areas, illustrated by a series of excellent charts and diagrams. Several maps illustrate typical weather conditions of the British Isles.

It is not often possible to say, with truth, that a book is absolutely indispensable to a worker in any department of science. Such a statement can, however, be made of the "Meteorological Glossary" and without fear of contradiction. We have here, closely packed into about 350 pages, explanations of technical terms which are in more or less frequent use by meteorologists—explanations often so complete that they suffice for all purposes of ordinary teaching or study. The "Glossary" is stated to be a continuation of "The Weather Map" referred to above, but it has a far wider range of usefulness than that statement implies. It is true that cross references in the "Glossary" make it highly desirable for those who use it to have also copies of "The Weather Map", as well as of the "Observer's Handbook" and of the "Computer's Handbook", all issued by the Meteorological Office. But the "Glossary" is absolutely indispensable even without those additional volumes and should henceforth be on the desk of every meteorological worker. The discussions were written by experts connected with the British Meteorological Office; the revision of the work for the present fourth issue was carried out by Dr. C. Chree, F.R.S., Superintendent of the Kew Observatory, and the direction of the whole undertaking was in the hands of Sir Napier Shaw. No more than that need be said to establish the fact that the work is authoritative, up to date, and complete. It is hardly necessary to select any sections for special mention, but attention may perhaps be called to the present interest of the discussions of airplane weather, the new pressure units, harmonic analysis, and wireless telegraphy in relation to meteorology. Meteorologists the world over are indebted to the British Meteorological Office for many valuable publications, but the new issue of the "Glossary" is distinctly the most generally useful of all. It is the working meteorologist's absolutely indispensable *vade mecum*.

R. DEC. WARD

DINES, W. H. **Meteorology in relation to aeronautics: A review of the data required by an aviator when in the air.** Diagrs. *Scientific American Suppl.*, No. 2239, Vol. 86, 1918, November 30, pp. 351-352; No. 2240, December 7, pp. 366-368. ["A paper read before the Aeronautical Society of Great Britain, and published in the *Aeronautical Journal*."]]

GUILBERT, GABRIEL. **Sur la prévision des variations barométriques.** *Comptes Rendus de l'Acad. des Sci. [de Paris]*, Vol. 168, 1919, No. 18, pp. 899-902.